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AD393393

OPERATIONAL REPORT - LESSONS LEARNED (RCS CSFOR-67) (U)

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QUARTER ENDING

31 JULY 1967

222ND AVIATION BATTALION

OCT 31 1968

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Lessons
Learned,

HEADQUARTERS, 222ND AVIATION BATTALION

APG-95291

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AVGC I

14 August 1967

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-67) (U)

TO: SEE DISTRIBUTION

⑨ Operational rept. for quarterly period
ending 31 Jul 67.

SECTION I

SIGNIFICANT EVENTS

11 14 Aug 67

A. Command.

12 15p.

1. (U) Lieutenant Colonel Thomas E. Thompson continues in command of this battalion during the reporting period.
2. (U) Major John R. Franznick assumed command of the 54th Utility Airplane Company (ULA) on 1 May 1967 vice Major George L. Shallcross.
3. (U) Major Eckols L. Shedden assumed command of the 73rd Surveillance Airplane Company (OVL) on 12 June 1967 vice Major Joseph R. Knudsen.
4. (U) Major Charles H. Gillman Jr., assumed command of the 147th Assault Support Helicopter Company (CH47) on 17 July 1967 vice Major Jack R. Moran Jr.
5. (U) Lieutenant Colonel Herbert W. Nichols assumed command of the 54th Utility Airplane Company (ULA) on 31 July 1967 vice Major John R. Franznick.
6. (C) The organization structure of the 222nd Combat Support Aviation Battalion during this period was as follows (all units located at Vung Tau).
 - a. Headquarters and Headquarters Company.
 - (1) 85th Medical Detachment.
 - b. 54th Utility Airplane Company (ULA).
 - (1) 255th Transportation Detachment.

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c. 73rd Surveillance Airplane Company (OV1).

d. 147th Assault Support Helicopter Company (CH47).

(1) 171st Transportation Detachment.

(2) 2nd Platoon (-), 478th Assault Support Helicopter Company (CH54) attached 1 June 1967.

(3) 772nd Medical Detachment (detached 1 May 1967 and re-assigned to the 214th Combat Aviation Battalion).

B. Personnel, Morale and Discipline.

1. (U) Programmed losses were higher during this reporting period than in previous periods.

2. (U) Three applications for Warrant Officer Flight Training and three applications for direct appointment to USAR Warrant Officer were submitted. There were no applications for Officers Candidate School submitted. One application for direct appointment to USAR Warrant Officer was approved, all other applications are pending.

3. (U) There were 795 recommendations for awards submitted during the period. There were 606 awards received during the period. Approximately one half of the awards received were Basic Air Medals and Oak Leaf Clusters to the Air Medal.

4. (U) The number of personnel voluntarily extending their normal overseas tour of duty by six months remains high. For this reporting period, forty-seven (47) enlisted men and one (1) officer voluntarily extended their tour by six months.

C. Intelligence and Counterintelligence.

1. (U) There were no significant events in this area. The battalion S-2 Section continues to publish a weekly summary of intelligence information gathered from various INTSUM reports received, and attendance at weekly USARV G-2 briefings.

2. (C) The S-2 Section has been active in coordinating the change of OPCON of the 73rd Surveillance Airplane Company (OV1) from MACV J2 to II FF V.

3. (U) The enemy order of battle was maintained throughout the

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period and weekly intelligence briefings were conducted for battalion key personnel.

D. Plans, Operations and Training.

1. (U) During the period, the battalion provided Army aviation support on each of the ninety-two days, committing an average of 21 aircraft per day. Missions conducted included troop transport, artillery air movement, aerial resupply, medical evacuation, radio relay and visual, photographic and electronic aerial surveillance.

2. (U) In May 1967 this battalion accomplished the first tactical airlift of the 155mm Howitzer by CH-47 Helicopter. This airlift was the culmination of a series of experiments and tests conducted by this battalion which provided the feasibility of this airlift technique. The procedures have been published by the 12th Combat Aviation Group describing the techniques employed.

3. (U) In June 1967, the CH-54 was assigned to this battalion in the form of the 2d Platoon (-), 478th Assault Support Helicopter Company with crews and maintenance personnel. On 21 June 1967 the CH-54 Helicopters were employed in conjunction with CH-47 Helicopters in airlift of 155mm Howitzer batteries of the 9th Infantry Division Artillery. On 29 June 1967 a demonstration was conducted at Bien Hoa for the purpose of familiarizing interested personnel and senior officers of II FF V with the mission capabilities of the CH-54. The information letter on CH-54 capabilities is attached at Inclosure 1.

4. (U) On 24 June 1967 the 478th Assault Support Helicopter Company of this battalion successfully accomplished its first CS drop under IFR conditions. See Section II, Part I, B2, for details on this operation.

5. (U) Semi annual familiarization firing was conducted for all members of this battalion during the month of July. Range facility limitations and operational requirements restricted the number of men firing each week, but the entire battalion fired during the three weekly periods scheduled.

6. (U) Sea survival training was conducted locally for the aviators of the 73rd Surveillance Airplane Company (OVL). The aviators were dropped from low altitude (8-10 feet) into the water wearing the equipment they would have on in event of ejection. They were required to inflate their life vest and swim to the one man survival raft from which they were recovered by boat. The program was very successful.

7. (U) During the reporting period the battalion received and filled eight (8) quotas to the USAF and USN survival schools located in the Phillipines.

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8. (C) In July 1967 this battalion furnished OV-1 and CH-47 aircraft support to the Air Sea Rescue effort conducted in the search for survivors of the B-52 crash over the South China Sea. 26.9 OV-1 and 25.1 CH-47 flight hours were devoted to this effort.

E. Logistics.

1. (U) The CH-47 fleet modernization program for the 117th Assault Support Helicopter Company was completed in May 1967. Aircraft availability of this company was dramatically improved by this action and has remained high through the reporting period.

2. (U) A program was introduced in CH-47 maintenance procedures whereby a more detailed inspection was made of the control systems during the 6th Periodic Inspection. The results of this program has been a reduction of vibration problems which were formerly experienced as aircraft exceeded this flight hour level.

3. (U) An extensive revetment program has been initiated to provide adequate revetments for all battalion aircraft. The materials have been received and work is progressing with technical and equipment assistance from the engineers.

4. (U) The avionics retrofit program for the U1A aircraft continues. To date one aircraft has been completed and one is in process. Three to four weeks are required for each aircraft to receive the retrofit installations.

5. (U) Plans were drawn and approved for the construction of personnel bunkers. The issued personnel bunker plans required extensive modification to permit their construction in the relatively restricted area available between the troop hutments. All materials have been drawn with the exception of construction timbers. When completed, adequate bunkers will be available for all personnel of this battalion.

F. Information.

1. (U) The hometown news release program has continued to receive excellent support from this battalion.

2. (U) Daily operational information is reported through information channels to the USARV Information Office.

G. Signal.

(U) There were no significant events in this area.

H. Surgeon.

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1. (U) The flight surgeon continues an aggressive program of aviation safety and personnel health preventive medicine. He has conducted regular classes in first aid and prevention of disease.

2. (U) The battalion medical personnel have been supporting MEDCAP activities in the NAM DONG refugee village located 5 miles north of Vung Tau.

3. (U) The flight surgeons continue support of the medical duty officer requirement of the 36th Evacuation Hospital located at Vung Tau. The working relationship between the medical section of this battalion and the 36th Evacuation Hospital has been greatly enhanced by this program.

I. Other - Civic Actions.

1. (U) Units of this battalion continue to support a progressive and realistic Civic Actions program under the staff supervision of the Battalion Civic Action Officer.

2. (U) Units sponsored a refugee hamlet, a local Vietnamese hospital, a local orphanage and a local public school. In addition, transportation of food stuffs and building materials for local Popular Force families is provided by this battalion in cooperation with Advisory Team #79 at Vung Tau.

3. (U) Long range plans were made in which this battalion will be the principal sponsor of a "Chieu Hoi" village to be developed near Vung Tau. The area was photographed, the town plan was designed and accepted and many of the necessary materials were gathered during this reporting period.

SECTION II, PART I

LESSONS LEARNED

A. Personnel.

1. (U) ITEM. Missing personnel and finance records (201 file and FDRF).

DISCUSSION. Experience has reflected a high incidence of personnel and finance records forwarded by mail, failing to arrive at this unit. A primary cause appears to be the diversion of personnel from their original assignment after arrival in Vietnam. The records of these individuals arrive at the original unit of assignment as addressed, but are lost or misplaced in subsequent transmittals.

OBSERVATION. To date there has not been a single incident of lost individual records in this unit, among personnel who were allowed to hand carry their own records. On the other hand, the non-receipt of records transmitted via mail delivery has created numerous morale problems due to the

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personal hardships generated by the absence of personnel and finance records.

B. Operations.

1. (U) ITEM. Responsibility for rigging loads for movement by cargo helicopters.

DISCUSSION. There has been a continuing problem in the enforcement of the doctrine that it is the supported units responsibility to prepare cargo for air movement. This problem has been most prevalent when CH-47 or CH-54 support is furnished to ARVN units and Special Forces detachments. Repeated attempts have been made to furnish FSN data for the sling and rigging equipment needed by these units, with a request that they initiate supply action to procure this equipment. These attempts have not been successful, the results being continued requests that the lift helicopters furnish slings, nets and rigging equipment.

OBSERVATION. The delays caused by the requirement to rig loads after the arrival of the lift helicopter at the supported unit results in poor utilization of the cargo helicopter. In the case of the CH-54, which has no internal cargo space for transporting slings and rigging equipment, an additional aircraft must be dispatched to accomplish this requirement, resulting in an unnecessary waste of aircraft flight time. Increased liaison activity is being initiated to effect a more satisfactory solution of this problem. Hopefully this will result in the supported units obtaining the necessary rigging equipment, however, the process could be expedited by command directive making the supported units aware of their responsibility in this matter

2. (U) ITEM. IFR delivery of CS gas.

DISCUSSION. Weather conditions ideal for employment of CS gas and VFR delivery techniques do not always occur at the same time. Normal drop altitude for CS gas (55 gal drums) is 2200 feet absolute. During the southwest monsoon, ceilings in this area are frequently below 2200 feet. A technique was developed by the 147th Assault Support Helicopter Company, which enlisted the assistance of the Vung Tau GCA facility, whereby the track of the desired drop area was plotted on the radar screen under VFR conditions. Then the delivery helicopter, flying at the desired drop altitude under instrument weather conditions, flew the desired track under GCA guidance, beginning and ending the drop as directed by GCA.

OBSERVATION. While this technique does require a radar facility within range of the drop area, it has proven very effective in the three instances it has been used by this unit. Results were observed and reported by the escort aircraft flying in VFR conditions during the drop.

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These missions were accomplished under weather conditions which would otherwise have prevented their accomplishment.

3. (U) ITEM. Altitude for employment of OV-1 SLAR aircraft.

DISCUSSION. In the past, the altitude for employment of SLAR aircraft was selected to provide optimum quality results. This procedure often conflicted with safe operational limitations due to weather conditions or friendly artillery, which resulted in loss of mission coverage.

OBSERVATION. By permitting the pilot to adjust his mission altitude to the existing weather/artillery conditions, percent of mission coverage has increased with a minimal loss of product quality.

C. Training and Organization. None.

D. Intelligence. None.

E. Logistics.

1. (U) R 1340 Pratt & Whitney Wasp Jr. Engine.

DISCUSSION. During this period, three (3) rebuilt P&W aircraft engines were found to be defective when installed on U1A aircraft. The defect prevented proper propeller pitch change and required engine replacement. An EIR was submitted in each case and corrections should be forthcoming, but there is no assurance that other engines in the supply system will not have the same defect.

OBSERVATION. Propeller pitch can be tested on the engine build up stand by checking the high pressure oil line from the propeller governor to the oil sump with a compressed air source. By noting where the air flows out of the propeller shaft the defect can be detected. If air flows from the oil return orifice, or does not flow at all, then further trouble shooting is required. Using the engine build up stand to perform this test will save many man hours and offer an easier method of testing than mounting the engine on the aircraft.

SECTION II, PART II

RECOMMENDATIONS

1. (U) That all personnel, except those specified by the unit commander or personnel officer, be permitted to hand carry their individual 201 files and financial records when they are reassigned.

2. (U) That the doctrine of supported units having responsibility for

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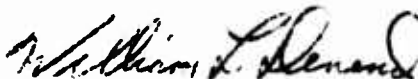
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preparation of loads for airlift be confirmed at all levels of command and that directives be published to require the procurement and maintenance of sling and rigging equipment by units requiring cargo helicopter support.



WILLIAM L. DENEND
LTC, Infantry
Commanding

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- 1 - 54th UAC
- 1 - 73rd SA
- 1 - 147th ASHC

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 222ND AVIATION BATTALION
APO 96291

AVGC-IC

10 August 1967

SUBJECT: Introduction to CH-54 (Skycrane) Operations

TO: See Distribution

1. Purpose. The purpose of this letter is to familiarize using units with the operational capabilities of the CH-54 (Skycrane) helicopter and to explain the responsibilities of the supported unit when utilizing this aircraft.

2. General. The CH-54 (Skycrane) helicopter is a twin turbine heavy lift helicopter. Its maximum gross weight is 42,000 lbs. The following data is provided for information:

a. Overall dimensions: Length (rotor tip to rotor tip maximum) 88 feet 5 inches.

b. Height: Top of tail rotor 25 feet 5 inches.

c. Main rotor diameter: 72 feet.

d. Fuel:

(1) JP-4 (alt JP-5).

(2) Consumption: Gross weight 3600 lbs per hour.

Without load 3200 lbs per hour.

e. Endurance:

(1) All tanks full 2 hours 10 minutes.

(2) Main tanks only 1 hour 20 minutes.

(3) Normal operations use main tanks only.

f. Airspeed:

(1) Without a load - sea level to 2000 feet, 115 knots.

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(2) At maximum allowable gross weight sea level to 2000 feet, maximum 95 knots. Normal cruise at gross weight, 80 knots.

g. Capabilities:

(1) Cargo capacity to 18,000 lbs external loading with reduced fuel and range.

(2) Normal operations 14,000 lbs load maximum.

(3) Level flight and landing capability with one engine at maximum gross weight.

h. Instrument flight: May be performed, but is not recommended with external loads.

3. Type Missions Performed:

a. Lift of equipment weighing between 8,000 and 18,000 lbs.

(1) Engineer equipment: Any piece of equipment which does not exceed the weight limitations and distances described in paragraph 4, below and which lends itself to sling or 4 point hook-up, may be transported. Equipment weighing more than 18,000 lbs may be moved by disassembly and reassembly at destination.

(2) Artillery Battery (155mm): These may be lifted intact with section equipment tied securely onto the tails. The equipment must be secured so as not to drop off in flight. Total weight of 155mm howitzer plus equipment should be approximately 14,000 lbs.

b. POL in collapsible bladders: This load should be rigged in groups of four 500 gal bladders each.

c. Aircraft recovery: Aircraft weighing less than 18,000 lbs may be recovered subject to the radius of action limitations described in paragraph 4, below. The 100 foot hoist cable gives the CH-54 the capability of recovering downed aircraft from areas with limited accessibility.

d. The CH-54 has the capability of emplacing loads very exactly, which is particularly advantageous in placement of bridge sections, towers and other equipment which requires a precise landing on a prepared base or restricted location.

e. External loading is accomplished by one of two methods, single point suspension and four point suspension.

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(1) Single Point Suspension - The normal means of external loading. Gives full advantage to the cable and winch assembly which may be used to extract loads from inaccessible areas. It provides the quickest hook-up procedures and is generally used when transporting bulky loads.

(2) Four Point Suspension: The four point suspension system may be used to lift loads which lend themselves to 4 point hook-up. (Trucks and some engineer equipment which have lifting eyes installed.) Using the four point system eliminates the need for rigging. Disadvantages of using the 4 point suspension system instead of the single point sling are:

(a) The CH-54 must be able to land at pick-up and drop-off sites.

(b) An average of 5 minutes time is necessary to make a four point hook-up or release.

(c) The jettison capability during flight does not have an emergency back-up system.

f. Special purpose module - Pod: Personnel or cargo may be carried in the pod (only one available). Limitations to utilizing this system are:

(1) The Pod is presently restricted from passenger use except in tactical emergency.

(2) Weights as opposed to radii described in paragraph 4, below, are reduced by the weight of the Pod which is 3,500 lbs.

(3) The attachment or detachment of the Pod to the helicopter requires approximately 30 minutes and must be accomplished on level ground.

(4) The 12 inch ground clearance of the Pod when on the ground or attached to the helicopter make utilization in rough areas impractical.

(5) There are seats for 67 passengers in the special purpose module.

4. Radius of mission from fuel source: The following can be used as a guide in determining mission feasibility.

a. Loads weighing over 14,000 lbs but less than 18,000 lbs require special planning. (Winds, weight, extra equipment aboard aircraft must be removed, etc.)

b. Loads 17,000 lbs and under where fuel is available at drop-off site:

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<u>WEIGHT OF LOAD</u>	<u>DISTANCE TO D/O</u>
17,000 lbs	16 N M
16,000 lbs	33 N M
15,000 lbs	49 N M
14,000 lbs	65 N M

c. Loads 17,000 lbs and under where fuel must be obtained by returning to P/U site:

<u>WEIGHT OF LOAD</u>	<u>DISTANCE TO D/O</u>
17,000 lbs	10 N M
16,000 lbs	22 N M
15,000 lbs	32 N M
14,000 lbs	44 N M

d. Odd shape loads which may limit airspeed below 60 knots must have radius of action determined by special planning. An example of this would be a Chinook rigged with drogue chute.

5. Rigging - Responsibility of unit being supported.

a. Rigging of loads must be accomplished prior to the CH-54's arrival. The CH-54 has no cockpit room for passengers or rigging materials.

b. Rigging of loads should be in accordance with applicable technical manuals for items of equipment being rigged.

c. Considerations peculiar to the CH-54 are:

(1) Rigging straps should be as short as possible commensurate with the proper rigging techniques. (Short straps provide for low hover and therefore more effective power utilization of the helicopter.)

(2) Two hook-up men must be available to hook each load. One man must catch the hook while the other inserts the clevis/donut.

(3) The only acceptable hook-up devices are:

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- (a) Sling, endless, nylon, 40,000 lbs, FSN 1670-902-3080.
 - (b) One large steel clevis with "U" down, FSN 1670-090-5354.
 - (c) Under no circumstances should two 10,000 lb donuts be used. Two donuts side by side in the hook will cause the hook to malfunction.
 - (d) Hook-up personnel should wear goggles or a gas mask.
 - (e) On missions where the helicopter must hover to emplace a piece of equipment, sufficient personnel should be available to manhandle the equipment into position. (Normally at least 8 men.)
- (4) Static electricity: The CH-54 hook accumulates a small static electricity charge. Although it is uncomfortable, it will not hurt ground personnel. However, it is considered to be a fire hazard when hauling fuel drums and a static probe should be used to ground the hook before pick-up. Fabrication of the static probe may be accomplished as follows:
- (a) A static probe may be fabricated from two ammunition box rods, or suitable substitutes, connected by approximately twenty-five feet of insulated wire or cable. One rod must be firmly grounded. The other rod, with an insulated handle to protect the ground handler, is used to contact the hovering helicopter to discharge electricity generated.
 - (b) Contact the aircraft with the probe as high above the load as possible. In the case of fuel bags, it is conceivable that a static spark could ignite the fuel if contact with the hook were made too close to a leaky rollagon.
6. Fire Support: The CH-54 has no armament to suppress enemy ground fire and therefore requires gunship support on missions where enemy fire is anticipated. Passive measures of defense are employed as a matter of course. Normally missions which originate and terminate in secure airfields are flown without gunship escort, unless weather conditions require low flight over "hot" areas.
7. Weather: Normal helicopter weather operating limitations are applicable. In addition, due to the inherent instability of the single point cargo system and the lack of suitable sling load display instruments, it is not presently recommended to fly sling loads under instrument conditions.
8. Coordination: When possible, using units should coordinate directly

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with the supporting unit either by personal liaison or by telephone. Details on rigging and mission timing can be finalized at this time. 147th ASHC Operations - Vung Tau 2460.

9. Blowing Debris. Rotor wash speeds for the CH-54 approximate 120 knots. The landing zones picked should therefore be clear of tents, and buildings. An LZ with a radius of 200 feet should be selected. Equipment, ponchos, boxes and other debris must be policed up regularly in the LZ. Canvas, if ingested by the crane's rotor system, would almost certainly cause a major accident.

10. Necessary information for mission requests:

- a. Type equipment to be lifted.
- b. Weight of equipment (Min 8,000 Max 18,000 lbs).
- c. Exact location of pick-up zone.
- d. Exact location of drop-off zone.
- e. Frequency and call sign of pick-up zone.
- f. Frequency and call sign of drop-off zone.
- g. Time to arrive at pick-up zone.
- h. Fire support team coordination as necessary.
- i. Status of rigging. (Load must be rigged prior to CH-54's arrival. CH-54's have no rigging capabilities.)
- j. Additional information.

11. The CH-54 Skycrane's presence in the II FF V zone greatly improves the airlift capability available to commanders with heavy lift requirements in this area. Observance of the guidelines presented herein will make employment most effective and beneficial to all concerned.

William L. Denend
WILLIAM L. DENEND
LTC, Infantry
Commanding

DISTRIBUTION:

Special to all using units

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